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# Foreign Animal Disease Report

United States  
Department of Agriculture  
Animal and Plant  
Health Inspection Service  
Veterinary Services

Emergency  
Programs



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## This Issue

Emergency Programs Activities  
Foreign Animal Disease Update  
New Test for Hog Cholera  
Wesselsbron Disease Vaccine  
Editorial Committee  
Subject Index

## Emergency Programs Activities

**Field Investigations.** During fiscal year (FY) 1990 (October 1, 1989, to September 30, 1990), veterinarians from the U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Veterinary Services (VS), and from State departments of agriculture conducted 202 investigations of suspected foreign animal diseases in the United States and Puerto Rico to eliminate the possibility that an exotic disease may have been introduced into the United States. These investigations included 98 for vesicular conditions, 10 for swine septicemic conditions, 11 for mucosal conditions, 15 for encephalitis conditions, 34 for screwworms or undesignated conditions, 1 for suspected avian influenza, and 33 for exotic Newcastle disease in poultry. All investigations were negative for exotic diseases.

**Velogenic Viscerotropic Newcastle Disease (VVND) Public Awareness Campaign.** APHIS continued its campaign to inform bird owners, dealers, and the public about the danger of obtaining or trading in smuggled birds in FY 1990. This campaign has been credited with reducing the number of cases of VVND found in pet birds. There were 15 cases of VVND in pet birds in 10 States in FY 1987, 6 cases in 5 States in FY 1988, 2 cases in 1 State in FY 1989, and no outbreaks involving pet birds or other species in FY 1990. VVND was last diagnosed in commercial poultry in the United States in 1974.

**Exotic Ticks on Imported Tortoises.** On June 29, 1990, employees of the U.S. Department of Interior's Fish and Wildlife Service (FWS) collected tick nymphs from tortoises believed to have been smuggled into the United States from Africa. On July 7, the National Veterinary Services Laboratories (NVSL) identified these nymphs as *Ornithodoros moubata* and *Amblyomma sylvaticum*. *O. moubata/porcinus* is a vector of African swine fever in Africa. The FWS found a second shipment of *Ornithodoros*-infested African tortoises in Pennsylvania. In both cases, the tortoises, shipping containers, and areas where the tortoises had been were treated with an approved pesticide.

The recommended treatment for ticks on tortoises is to dust them lightly with 5 percent carbaryl (Sevin) dust.\* The treatment should be repeated at least three times at 7-day intervals.

\*Trade names are used in this publication solely for the purpose of providing specific information. Mention of a trade name does not constitute a guarantee or warranty of the product by the U.S. Department of Agriculture or an endorsement by the Department over other products not mentioned.

Carbaryl dust has been used to control mites on snakes without harming the snakes. Two acaricides are registered for tick control in large areas such as fields and woods: chlorpyrifos (Dursban), 0.289 kg active ingredient (AI)/hectare; and tetrachlorvinphos (Rabon), 1.10 kg AI/hectare. Affected premises should be treated with chlorpyrifos at least three times at 70-day intervals. (The treatment regimen was prescribed by Glen I. Garriss, research entomologist with USDA's Agricultural Research Service.)

**Suspected Screwworms in Texas.** On August 17, 1990, an employee of the Texas A & M Agricultural Experiment Station near the town of Sonora, TX, reported an egg mass on a fawn that had recently died. The egg mass was collected, tentatively identified as screwworm on August 18 by a local entomologist, and sent to the NVSL for further identification. As a precautionary measure, on August 19, 1.6 million sterile male screwworms were dispersed over an area 20 by 20 miles around, including the Agricultural Experiment Station. The insects were dispersed by contract aircraft provided by the Mexican-United States Screwworm Project. On August 20, NVSL determined that the egg mass was not screwworm but probably *Phormia regina*, the black blowfly.

**Training.** From November 5 to 9, 1990, a group of 20 veterinarians (teachers of infectious diseases at colleges of veterinary medicine and laboratory diagnosticians from animal and poultry diagnostic laboratories) received training at the Foreign Animal Disease Diagnostic Laboratory at the Plum Island Disease Center. The trainees observed clinical signs and postmortem lesions of a number of foreign diseases and attended lectures designed to enhance awareness and reporting of exotic diseases.

The following training has been proposed for FY 1991:

Military Support Course for National Animal Disease Emergencies, Hyattsville, MD, April 8–12, 1991.

Foreign Animal Disease Diagnostician's Course, Ames, IA, and Plum Island, NY, April 29–May 10, 1991.

Wildlife Diseases Seminar, Athens, GA, July 16–19, 1991.

**Bovine Spongiform Encephalopathy (BSE) Survey.** As reported in the fall 1990 issue, cattle that were imported into the United States from the United Kingdom and Ireland since January 1, 1981, are being traced to determine if any have shown symptoms suggestive of BSE. Records indicate that 462 cattle were imported. Over half of the total cattle imported have been located and investigated. All of the investigated cattle were negative for evidence of BSE.

(Dr. M.A. Mixson, USDA, APHIS, VS, Emergency Programs, Hyattsville, MD, (301) 436-8073)

## Foreign Animal Disease Update

This update article is a summary of disease surveillance information taken from various sources including Bulletins of the Office International des Epizooties (OIE) covering April, May, and June 1990.

A total of 465 outbreaks of **foot-and-mouth disease** (FMD) were reported to OIE during April, May, and June 1990. South America reported 156 outbreaks; the Middle East countries, 87; the African countries, 126; and Asia (including the U.S.S.R. and Turkey), 96.

In South America, the Pan American Foot-and-Mouth Disease Center identified three outbreaks of FMD type A and one outbreak of type O from Bolivia. Brazil reported a total of 85 FMD outbreaks in April, with 2 type A, 2 type O, and 81 untyped. All the Brazilian cases occurred in bovids. Colombia experienced 27 FMD outbreaks due to type A virus and 8 outbreaks due to type O virus. Uruguay reported 10 type O outbreaks, 11 type A outbreaks, and 11 outbreaks of untyped FMD from April through June.

The Secretary of Agriculture recognized Chile as free of FMD. The disease last occurred in Chile in 1987 (see 15-4:3).

In the Middle East, Bahrain reported one occurrence of untyped FMD during May. Iran reported 43 outbreaks of untyped FMD and 2 outbreaks of type O in October and November 1989. Israel and the occupied territories reported some outbreaks of type O for December and August 1989. Oman reported 16 outbreaks of type O for February and March 1990 and 19 outbreaks of untyped FMD in April, affecting 1,412 animals in all. Data from the World Reference Laboratory for Foot-and-Mouth Disease, Pirbright, UK, identified type O FMD virus from outbreaks in Saudi Arabia and Yemen that occurred during March and May 1990.

In Africa, Algeria reported 83 outbreaks of FMD type O, with 1,156 new cases during May. A total of 478 bovids were affected in a March outbreak in Benin. Burundi and Zambia reported outbreaks of type A FMD during June and May, respectively. Chad reported outbreaks of FMD during January through April. Tunisia reported 36 outbreaks of type O FMD for February and March.

On October 15, 1990, the Cote-d'Ivoire (Ivory Coast) veterinary services notified OIE of an outbreak of FMD affecting 15 herds in the Bouake municipality. A total of 638 cases had been clinically identified by October 6, 1990. A total of 895 bovids had been affected by the time of the report, with 2 animals slaughtered and 1 reported dead. It is suspected that the disease originated from a neighboring country by means of a livestock market that serves the region. A restriction has been placed on animal movements, and surveillance of surrounding farms is underway. Samples have been sent to the Pirbright laboratory for confirmation and virus typing. The most recent prior case of FMD in Cote-d'Ivoire was reported in 1982.

In Asia during June, Bhutan and Nepal submitted specimens that were identified by the Pirbright laboratory as type O FMD. Virus type Asia 1 was also isolated from an outbreak in Nepal during June. During January and February, 11 outbreaks affecting 146 bovids were reported by Sri Lanka. Myanmar (formerly Burma) reported outbreaks of types O, A, and Asia 1 during May. Pakistan reported a total of 17 outbreaks of FMD from March through May, with types O, A, C, and Asia 1 implicated in 10 of the outbreaks. FMD outbreaks in Thailand during January, February, March, and May were identified as type O; one outbreak in April affecting 303 bovids remained untyped. The Asian U.S.S.R. reported 3 outbreaks of FMD type A in January, affecting 79 cattle and 207 swine, and 1 outbreak of type C in February, with 83 cattle cases.

Turkey reported 36 outbreaks of type O FMD and 10 of type A during March, April, and May.

**Vesicular stomatitis** was identified in 53 outbreaks in the Americas south of the United States. Colombia reported 630 bovine cases caused by the Indiana type and 151 cases caused by the New Jersey type during March through May. Mexico and



Nicaragua reported the only other outbreaks caused by the Indiana type in March. Costa Rica and El Salvador identified six outbreaks caused by the New Jersey type during March through May. Outbreaks caused by the New Jersey type were also reported from Belize, Guatemala, Honduras, Mexico, Nicaragua, and Panama.

No outbreaks of **swine vesicular disease** or **Rift Valley fever** were reported during the second quarter of 1990.

Twenty-seven outbreaks of **rinderpest**, affecting 503 bovids, were reported by Sri Lanka for January and February. The U.S.S.R. identified seven cases in the Georgian Republic in January.

Cote-d'Ivoire reported outbreaks of **peste de petits ruminants** (pest of small ruminants) from March through June. In March, the Central African Republic reported 2 outbreaks affecting 25 sheep and 443 goats. Oman reported 3 outbreaks February through April, with a total of 1,263 animals affected.

**Contagious bovine pleuropneumonia** (CBP) outbreaks were reported by Cote-d'Ivoire in March, April, May, and June. Kenya identified a total of nine outbreaks in February and March. In the first 4 months of 1990, Portugal reported 314 CBP outbreaks involving 1,152 cases. Kuwait reported CBP outbreaks in April and May, and Myanmar reported CBP activity in May. In August, Spanish agriculture authorities reported an outbreak of CBP in the Province of Madrid. Their report indicates that 193 animals were involved and 22 were destroyed. CBP was last reported in Spain in October 1989, when the Provinces of Madrid and Segovia each identified an outbreak. Prior to the 1989 outbreak, Spain had not recorded any CBP activity since 1984. The European Economic Community placed restrictions on the movement of Spanish cattle in May 1990. Subsequently, an outbreak of CBP was identified in the Guipuzcoa Province of the Pais Vasco (northern Spain). The initial detection was made September 4, 1990, and 21 cases were confirmed by clinical pathology and complement fixation tests. Control measures taken in the area included destruction of the 39 bovids present at the affected farm, the institution of a ban on animal movements, sanitary measures, and serological survey of animals older than 1 year on adjacent farms.

**Lumpy skin disease** (LSD) outbreaks were reported by eight African countries. Cote-d'Ivoire recorded LSD outbreaks from March to June, inclusively. Botswana identified 1 outbreak in May while Madagascar reported 18 outbreaks in both January and February. In the last 3 months of 1989, Zambia experienced 4 outbreaks of LSD. Zimbabwe reported 8 outbreaks of LSD in February and March involving 1,703 cases, and 16 outbreaks in May and June affecting 843 animals. Namibia and South Africa also reported LSD outbreaks from March through May.

South Africa and Zimbabwe reported **bluetongue** (BT) isolations in March, April, and May. Namibia reported 3 outbreaks of BT for April and May involving 337 animals.

**Sheep and goat pox** (SGP) was reported from Africa, Asia, and the Middle East. In northern Africa, Algeria reported 16 outbreaks in March; Morocco reported 3 outbreaks in May involving 360 sheep; and Tunisia reported 19 outbreaks in the first 3 months of 1990 affecting 310 animals. Cote-d'Ivoire reported SGP from March through June. Iran reported 40 SGP outbreaks in October and November 1989. In April and May 1990, Kuwait identified 3,367 cases of SGP in 16 outbreaks in sheep, while Oman reported 4 outbreaks involving 22 animals. The 199 outbreaks recorded in Turkey for March, April, and May affected an estimated 704,000 sheep and over 1,000 goats; 572 sheep

reportedly died. SGP was also reported from Pakistan and Myanmar in March and May, respectively. Sri Lanka reported 2 outbreaks of SGP, involving 150 animals for the first month of 1990.

Four African nations reported **African horse sickness** (AHS) during the second quarter of 1990. In May, Botswana identified an outbreak of AHS while Namibia reported 2 outbreaks, with 10 cases. South Africa reported AHS activity in May and June. Zimbabwe reported outbreaks in March, May, and June involving 118, 4, and 2 horses, respectively. Most recently, Spain and Morocco reported AHS outbreaks in September 1990. Spain had identified 52 outbreaks of AHS in 1990, as of November. All were located in a 20- by 50-km area in the Province of Malaga. Spanish animal health officials estimated that 460 horses died or were sacrificed due to AHS. As in previous years, the Spanish outbreaks were caused by AHS virus type 4. The Moroccan outbreaks were centered in the Provinces of Chechaouen, Kenitra, Larache Sidi Kacem, Taounate, and Tetouan. By the end of October, the 40 outbreaks in Morocco included over 340 cases.

AHS virus type 9 has been reported in Saudi Arabia by the Pirbright laboratory.

All cases of **African swine fever** (ASF) reported in April, May, and June were found in Europe. Spain and Italy reported 9,657 and 209 cases, respectively. Portugal had 6 outbreaks from March to May involving 272 swine.

Europe experienced **hog cholera** (HC) throughout the first half of 1990. Belgium confirmed a January outbreak involving 134 swine and an additional 71 outbreaks affecting 94,625 swine from March through June. Austria, France, Germany, the Netherlands, and Yugoslavia also reported HC outbreaks. During January, the U.S.S.R. reported 2 outbreaks from Lithuania and Moldavia involving 6,880 swine. In Africa, Madagascar reported an undetermined number of cases of HC in January and February. Mexico reported a total of 14,795 cases from March through May. Brazil and Paraguay both reported two outbreaks in the first half of 1990. Taiwan identified 11 outbreaks involving 13,730 swine from February through May. South Korea had 11 outbreaks involving 506 cases from March to May. Hong Kong, Myanmar, and Sri Lanka also reported HC activity. An outbreak of HC was reported from the Marignana municipality of South Corsica, France, October 9, 1990. The outbreak affected 200 Corsican pigs, killing 6 of them. The disease was associated with the consumption of garbage from an unauthorized disposal facility.

Madagascar and the U.S.S.R. were the only countries to report **Teschen disease**, with outbreaks in January and February.

Myanmar reported an outbreak of **fowl plague** in May 1990.

African nations reporting **Newcastle disease** (ND) in the second quarter included Botswana, Cote-d'Ivoire, Egypt, Kenya, Madagascar, Namibia, Tunisia, and Zambia. (The virus was untyped and was assumed to be velogenic.) In Europe, Austria and Italy reported single outbreaks in April and June, respectively. Yugoslavia identified 114 outbreaks over the first 4 months of 1990. Portugal's 2 outbreaks in June resulted in the loss of 120,500 birds and were the first outbreaks recorded there since 1983. In April and May, Turkey reported 16 outbreaks involving 193,380 aves. Iran reported outbreaks in October, and Bahrain reported outbreaks in November 1989 and in May 1990.

In Asia, Myanmar, Pakistan, and South Korea reported outbreaks of ND in April and May. Two March outbreaks of ND in Mexico involved 5,170 cases. Panama, Brazil, and Paraguay also reported cases in the second quarter of 1990.

Canada has reported the isolation of **viscerotropic velogenic Newcastle disease** (VVND) virus from wild cormorants, white pelicans, and gulls collected after a "die-off" of these species in northern Saskatchewan Province. The disease incident began in August 1990 and was originally diagnosed as mesogenic Newcastle disease. The areas affected are in the vicinity of Lavellee Lake, Tobin Lake, and Last Mountain Lake. These locations are not near any domestic poultry. The Canadian poultry industry has been alerted and asked to report any unusual losses. The last recorded outbreak of Newcastle disease from Canada was in 1973.

Sweden recorded its first outbreak of **viral hemorrhagic disease** (VHD) of rabbits in June. Malta reported 11 outbreaks of VHD in March.

In Mexico, a total of eight active outbreaks were reported between May 30 and October 26, 1990. The outbreaks have occurred in the states of Hidalgo and Mexico and the Federal District. The opposite map shows the sites of active outbreaks during the period January 1 through October 26.

A total of 96 rabbit colonies had serological evidence of VHD during the period January 1 through October 26. Totals by state were: Hidalgo, 53; Mexico, 29; Federal District, 7; Puebla, 4; Jalisco, 2; and Morelos, 1. A total of 13,708 rabbits have been distributed as sentinel animals in controlled geographical areas of Mexico where restocking is to take place.

In October, the United Kingdom's Ministry of Agriculture, Fisheries and Food (MAFF) reported the isolation of a streptomycin-sensitive strain of *Taylorella equigenitalis*, the etiologic agent of **contagious equine metritis**, (CEM) from a nonthoroughbred horse in the Dumfries and Galloway region of Scotland. The last isolation of CEM in the United Kingdom was in January 1986. Bacteriologic surveillance procedures and techniques as described in the Code of Practice have been instituted, and breeding establishments have been encouraged to follow those procedures.

By June 1990, MAFF officials had confirmed 14,324 cases of **bovine spongiform encephalopathy** (BSE) affecting 7,604 herds. Recent epidemiologic studies indicate that (1) 91 percent of BSE cases in the United Kingdom have been in dairy herds; (2) within-herd incidence is low (61 percent of affected herds had 1 case); (3) breed, gender, stage of lactation/pregnancy, and season were found not to be predispositional factors; (4) BSE was not associated with vaccines, pharmaceutical products, agricultural chemicals, or contact with sheep; and (5) where accurate feeding histories were available, they revealed that affected animals had been fed rations containing meat and bone meal. Affected areas in the United Kingdom include Scotland, Northern Ireland, Isle of Man, Jersey, and Guernsey; however, half of all reported cases are concentrated in southern England. New suspect BSE cases in the United Kingdom are occurring at the rate of 300 per week.

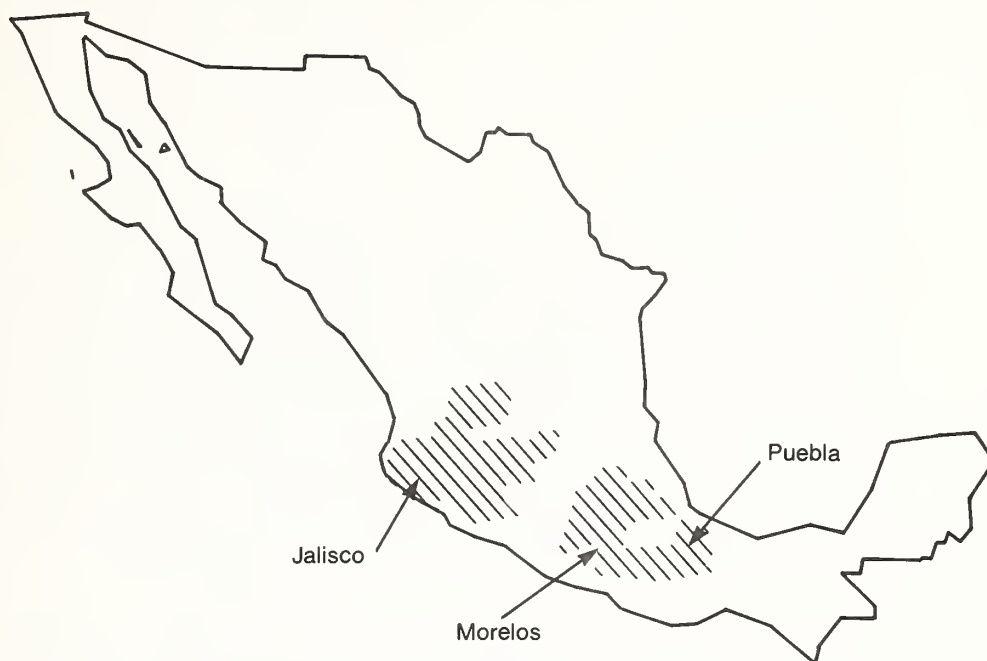
The last reported case of **screwworm** (SW) in Mexico occurred on July 10, 1990. Prior to this case, the last SW isolation there was made in early May. Belize reported SW during the last week of November from the district of Stann Creek. Sentinel sheep in that district were free of SW. APHIS expects that Guatemala will soon begin dispersion of sterile flies over the last quarter of its land area that has not been treated.



# Viral Hemorrhagic Disease in Rabbits

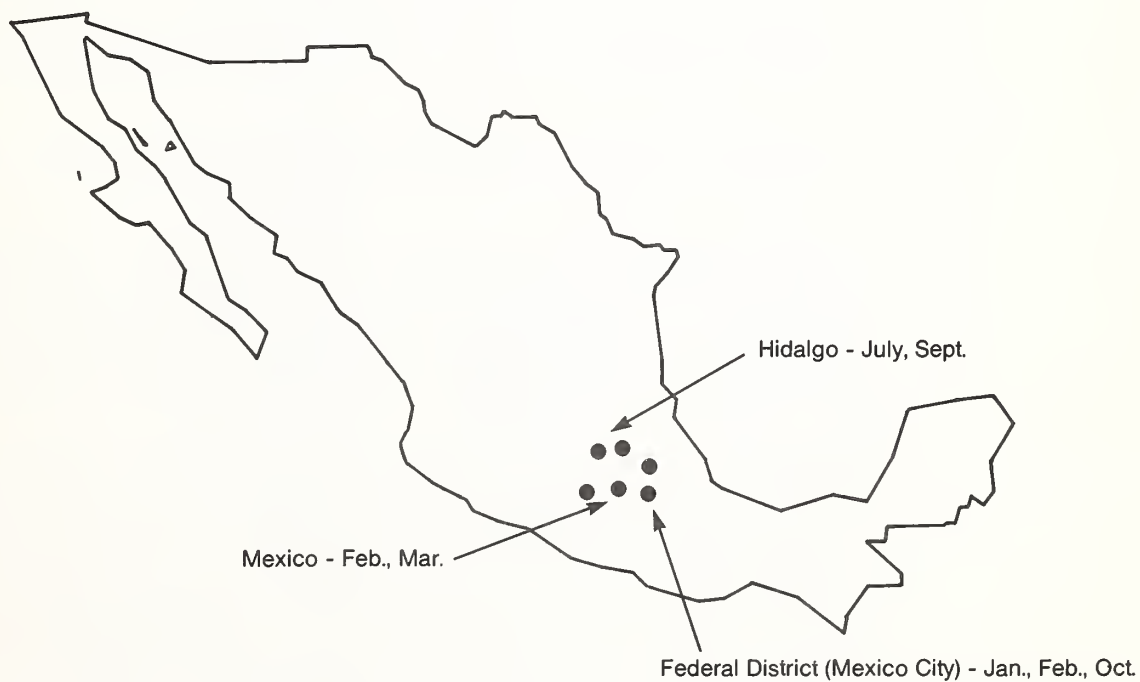
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## Mexican States with Serologic Evidence (1990)



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## Active Outbreaks in Mexico (1990)



Cases of SW continue to be reported from Libya (see 17-4: 7 and 18-2: 6). According to sources with the Food and Agriculture Organization of the United Nations, the infested zone comprises a coastal area surrounding Tripoli that extends up to 100 km inland and within 20 km of Libya's western border with Tunisia. A total of 10,233 cases of SW were reported in Libya for the first 10 months of 1990 (January, 95; February, 87; March, 156; April, 217; May, 367; June, 978; July, 1,569; August, 2,145; September, 2,915; and October, 1,704). Animal inspections in neighboring Egypt, Tunisia, and Chad have not revealed any cases. The predominant species infested in Libya is sheep (77 percent of total affected animals), with cattle (14 percent), goats (3 percent), camels (2 percent), dogs, horses, donkeys, and other species (each less than 1.3 percent) also affected.

(Dr. Peter J. Fernandez, International Services, APHIS, USDA, Hyattsville, MD 20782, (301) 436-8892)

## **New Test for Hog Cholera**

The fluorescent antibody neutralization test (FANT) has been used routinely at the NVSL to screen sera for antibodies against HC virus. This test requires high-quality cell cultures, the use of immunofluorescence to interpret the test, and 3 days to perform. Sera that are toxic can produce false-positive test reactions. Animals that have bovine viral diarrhea (BVD) antibodies react positively to the HC test. Therefore, all positive sera must be titrated against both viruses. Approximately 17,000 sera that are received annually from abattoirs in Texas, Puerto Rico, New Jersey, Massachusetts, Rhode Island, and New Hampshire are FANT tested for HC (see 16-1: 5, 1988). APHIS-VS considers these States to have a high risk of introduction of HC because they are near Mexico and because some of their farmers feed swine garbage.

An immunoperoxidase test (IPT) was recently adapted from a protocol provided by Stephen Edwards (Central Veterinary Laboratory, Weybridge, England). Cells for use in testing serums for HC antibodies were seeded into 96-well microtiter plates and grown for 24 hours. The cells were then infected with HC virus and allowed to grow an additional 24 hours. The cells were fixed with 20 percent acetone, overlaid with a dilution of the test serum, and incubated for 30 minutes. The serum was washed off, and horse-radish peroxidase labeled antiswine conjugate was added for 20 minutes. After additional washing, 3-amino-9-ethylcarbazole was added as a substrate, and the reaction was examined with a light microscope. A positive reaction was indicated by red staining of HC-infected cells.

A panel of 160 sera from experimentally infected swine with antibody titers against HC and/or BVD was tested by the IPT and the FANT (fig. 1).

Sixty-nine samples were positive by the IPT, and 74 samples were positive by the FANT. Forty-nine of these positive samples were positive for HC antibodies on the FANT. Twenty sera were positive for BVD by the IPT and had FANT titers of greater than 1:128. Five additional sera had low BVD titers on the FANT and were negative on the IPT. In addition, 641 surveillance samples were tested by both methods (fig. 2).

Thirty-three sera were positive by the FANT; of these 33, only 12 were positive by the IPT. When the 33 FANT-positive sera were tested by the immunofluorescent antibody test, the 12 IPT-positive samples were positive. The 12 IPT-positive sera had BVD antibody titers greater than 1:128. The remaining sera either had BVD antibody titers lower than 1:128 or had HC and BVD antibodies of equal titer, which APHIS-VS believes were false positives due to serum toxicity. All 33 FANT-positive samples were negative on the HC enzyme linked immunosorbent assay (ELISA).

Figure 1

## Test Results Comparison from Experimental Swine

Positive Sera

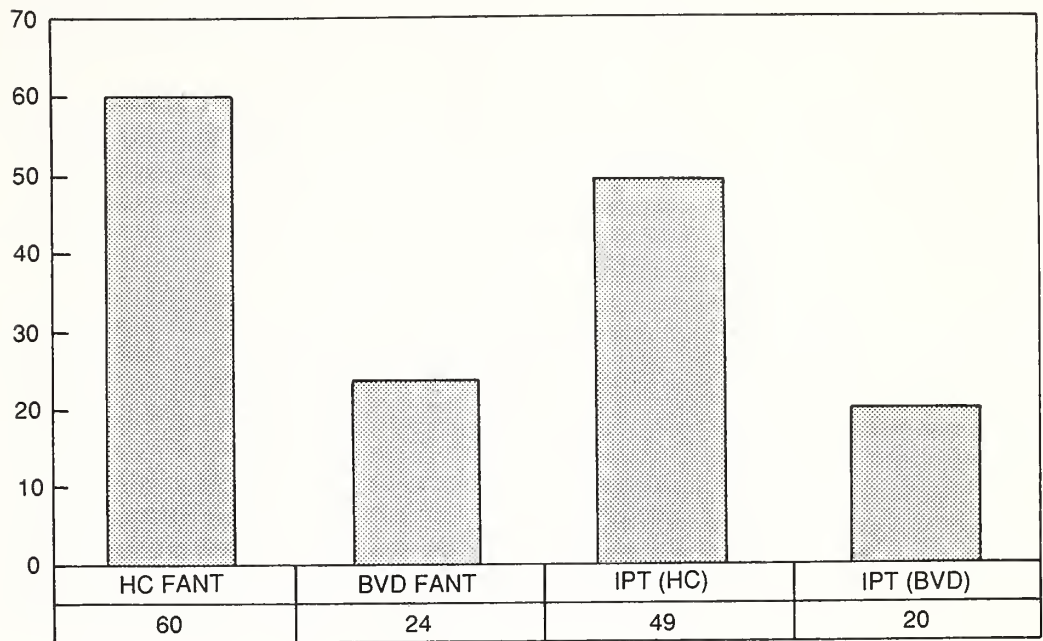
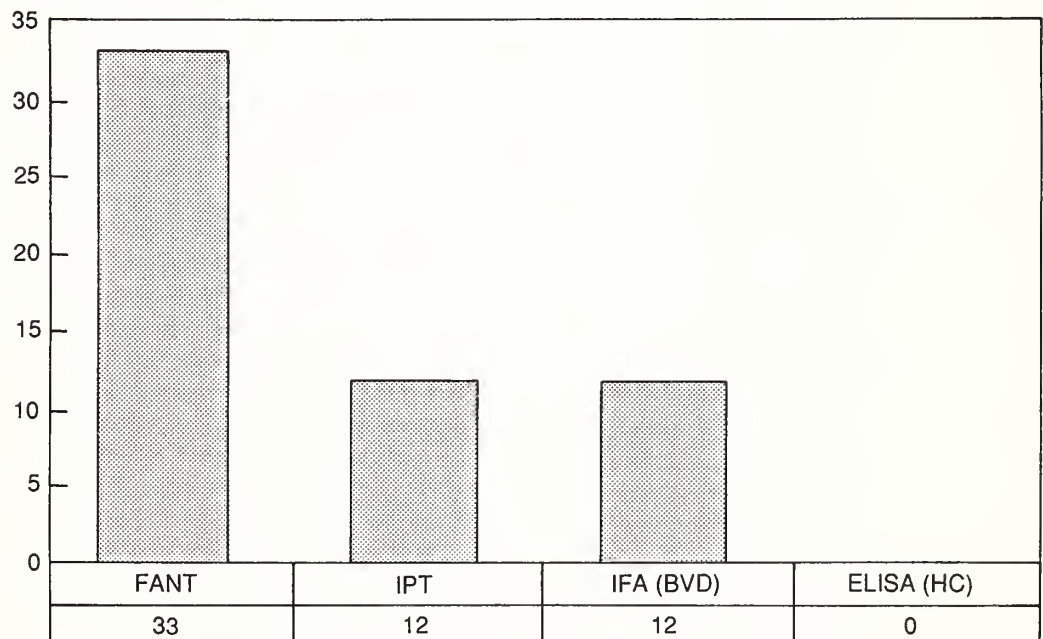


Figure 2

## Test Results Comparison from Surveillance Samples

Positive Sera



Based on results of the comparison and the work of Afshar and coworkers (Afshar, A.; Dulac, G.C.; Bouffard, A. 1989. Application of peroxidase labeled antibody assays for the detection of porcine IgG antibodies to hog cholera and bovine viral diarrhea viruses. *Journal of Viral Methodology*. 23: 253-261), APHIS specialists concluded that the sensitivity of the IPT equaled that of the FANT. IPT specificity was greater than that of FANT. The IPT did not detect BVD antibody titers below 1:128. The IPT also greatly reduced the time required to test sera. Infected cell cultures for use in the IPT can be made in advance and stored in the freezer for up to 3 months so that they are available for testing sera the same day samples are received. Samples that are positive on the IPT are tested by a commercial HC ELISA kit in which there is no cross reaction with BVD antibody and, if necessary, by the FANT.

(D. R. Jutting, NVSL, Science and Technology, APHIS, USDA, Ames, IA, (515) 239-8551)

### **Wesselsbron Disease Vaccine**

A recent review of Wesselsbron disease (WD) in Africa noted the availability of a partially attenuated WD vaccine for livestock (see 17[1]: 9-15, 1989). The vaccine was developed and marketed in South Africa, where it has been used from 1959 onward. APHIS' original article on this subject erroneously reported that the vaccine was marketed in South Africa from 1955 onward. The vaccine was first used on a large scale, together with Rift Valley fever (RVF) vaccine, during the 1974-75 RVF epizootic in South Africa. During the ensuing months, many cases of teratology were observed. The freeze-dried WD vaccine currently sold in South Africa is recommended for use in nonpregnant sheep and cattle in winter and early spring before mosquitoes become active.

No outbreaks of WD virus infection were specifically described in South Africa after a 1956-57 outbreak in sheep on several farms in the Middleburg district of Cape Province. APHIS' review article erroneously reported that there were outbreaks of WD virus infection in South Africa after 1957.

(The editor thanks Professor R. Swanepoel, National Institute for Virology, University of Witwatersrand, Private Bag X4, Sandringham, 2131 South Africa, for providing the correct information in a personal communication, October 1, 1990.)

### **Editorial Committee**

Membership on the FADR Editorial Committee has been changed. The current members are Edwin I. Pilchard (chairman), Robert R. Ormiston, M.A. Mixson, Michael S. Gilsdorf, Eric R. Hoffman, Peter Fernandez, John J. Blackwell, and Linda Ferguson.



## Subject Index

This subject index covers articles that appeared in volumes 10 through 18 of the Foreign Animal Disease Report. It provides quick access to articles that contain information related to the index words. Subjects are cited by volume number, (issue number), page number or span of pages, and year of publication. Readers who desire to maintain a complete file of the indexed articles can obtain copies of prior issues by sending a request to the editor. A subject index will be published each year in the winter issue.

Subject	Volume/Page	Year
African horse sickness		
In Africa	16(1):3	1988
	16(3):4	1988
	16(3):4	1988
	18(1):5	1990
	18(2):5	1990
	18(4):5	1990
In Portugal	18(2):5	1990
Review	16(4):7-12	1988
In Spain	15(4):4	1987
	16(1):2	1988
	16(4):4	1988
	17(1):2-6	1989
	17(2):3	1989
	17(4):6	1989
	18(2):5	1990
	18(4):5	1990
African swine fever		
In Africa	16(1):3	1988
	17(4):6	1989
	18(1):6	1990
	18(2):5	1990
In Angola	16(4):4	1988
In Belgium	13(2):11	1985
	13(3):6-8	1985
Free of	15(1):4	1987
	15(3):2	1987
In Cameroon	13(1):6	1985
In Canada, potential impact of,	11(4):7-8	1983
In the Dominican Republic	10(1):2	1982
In Haiti	10(2):3	1982
	10(3):2	1982
	11(1):3	1983
	11(2):2-3	1983
	11(3):2	1983
	11(4):2-3	1983
	12(4):1-2	1984
In Italy	15(2):12	1987
	17(4):6	1989
	18(1):5	1990
	18(2):5	1990
	18(3):4	1990

In Malawi	13(1):6	1985
In the Netherlands	14(2):2	1986
	14(3):4	1986
	15(1):4	1987
Free of	15(4):3	1987
In Portugal	16(3):4	1988
	16(4):4	1988
	17(1):7	1989
	17(2):3	1989
	17(4):6	1989
	18(1):6	1990
	18(2):5	1990
	18(3):4	1990
	18(4):5	1990
Review	14(2):7-11	1986
In Sardinia	10(2):9	1982
	11(1):4	1983
	16(4):4	1988
In Senegal	18(3):4	1990
In South Africa	15(2):12	1987
	18(2):5	1990
	18(3):4	1990
In Spain	16(3):4	1988
	16(4):4	1988
	17(2):3	1989
	17(4):6	1989
	18(1):6	1990
	18(2):5	1990
	18(4):5	1990
In Zaire	17(1):7	1989
	18(4):5	1990
Akabane review	17(3):9-13	1989
Alcelaphine herpesvirus, types 1 and 2	12(4):4	1984
Alpacas, imported from Chile	12(3):2	1984
<i>Amblyomma</i>		
<i>hebraeum</i>	12(3):2-3	1984
spp.	13(2):13	1985
<i>variegatum</i>	13(1):7	1985
In the Caribbean	15(1):14-15	1987
Animal and Plant Health Inspection Service (APHIS)		
Foreign Service	10(3):5-6	1982
Text exercise	10(2):1-2	1982
	11(2):6	1983
Animal diseases eradicated from the United States	10(1):5-6	1982
Animal health information systems, Office		
International des Epizooties	16(2):5-6	1988
Animal products		
Exotic disease agents in	13(4):1-2	1985
Port inspections	11(1):9-11	1983
Antigua wildlife survey	17(4):4	1989
Aino virus	17(3):9,10	1989
Arthrogryposis, in sheep	15(2):2-3	1987

Asiatic hemorrhagic septicemia		
In Pennsylvania and Texas	13(3):13	1985
Review	13(2):6-11	1985
Audiovisuals, foreign animal disease	13(3):9	1985
Avian imports studied	14(3):7	1986
Avian influenza (AI)		
In Africa	17(2):4	1989
In California	12(2):2	1984
Economic assessment of	13(1):1-3	1985
In Ireland	15(3):3	1987
In Maryland	12(1):1-2	1984
	12(2):1	1984
	13(2):3	1985
In New Jersey	12(1):1-2	1984
	12(2):1	1984
In Pennsylvania	12(3):1	1984
	12(4):1	1984
	14(1):1	1986
In Chickens	13(3):2	1985
Update	13(1):1	1985
	13(3):2	1985
	14(3):1-4	1986
Review	12(2):5-11	1984
Seminar in Mexico	14(1):3	1986
Surveillance completed	13(2):2	1985
Survey	15(1):1	1987
	16(1):2	1988
	16(2):2-3	1988
	17(1):1	1989
	18(3):1	1990
In Virginia	12(3):1	1984
	12(4):1	1984
In turkeys	13(3):3	1985
In Washington, DC	13(3):3	1985
Avian influenza virus		
A/chicken/Pennsylvania/83	13(3):3	1985
In chicken eggs	13(1):3	1985
Genetics	14(2):6-7	1986
Highly pathogenic	13(3):5	1985
H5N2	13(1):1	1985
	15(1):1	1987
Research on	13(3):2-5	1985
H7N3	13(1):1	1985
H10N8	13(1):1	1985
In wildlife	12(2):2-4	1984
Avian salmonellosis	16(4):2-3	1988
Babesiosis		
In cattle, Puerto Rico	13(3):1	1985
In horses, Puerto Rico	11(4):5	1983
Review	13(4):8-14	1985

Belgium, African swine fever in	13(2):11	1985
Benign African theileriosis	13(2):13	1985
Biosecurity videos	17(1):2	1989
Bird imports	10(1):1	1982
Blue eye paramyxovirus, in swine	18(1):11-15	1990
Bluetongue		
In the Caribbean	16(3):6-7	1988
And Central America	17(3):6	1989
In Florida	11(4):3	1983
In Israel and Jordan	18(2):4	1990
In Malaysia	16(2):5	1988
	18(1):5	1990
	18(3):4	1990
In South Africa	18(2):4	1990
In the United States	18(1):5	1990
Virus type 2	11(3):3	1983
Bongo embryo exchange	15(4):7-8	1987
Bovine embryo import-export	18(1):7-9	1990
Bovine spongiform encephalopathy (BSE)		
Review	16(4):4-7	1988
Surveillance	18(3):2	1990
In the United Kingdom, Ireland, and Oman	18(2):6	1990
	18(3):5	1990
	18(4):6	1990
Bovine theileriosis review	13(2):12-17	1985
BSE. (See: Bovine spongiform encephalopathy.)		
Buffalo, African wild	13(2):12	1985
Bureau of Animal Industry, centennial		
	12(1):3	1984
	12(2):13	1984
	12(3):7	1984
Cache valley virus	15(2):2-3	1987
Caliciviral disease		
Review	11(3):8-16	1983
Update	14(3):5-6	1986
Cattle importation	12(1):4	1984
Cattle tick fever, Puerto Rico	13(3):1	1985
Central America		
Animal diseases of	11(3):6-7	1983
Veterinary services of	11(3):3-7	1983
Chicken hydropericardium	18(1):10-11	1990
China, swine exported to	14(2):5-6	1986
Contagious bovine pleuropneumonia		
In Africa	15(2):12	1987
	16(1):4	1988
	17(2):3	1989
	18(1):5	1990
	18(2):4	1990
	18(4):4	1990
In the Far East	15(1):3	1987



In Kuwait	15(2):12	1987
	18(1):5	1990
	18(2):4	1990
In Portugal	15(3):3	1987
	17(1):7	1989
	18(2):4	1990
	18(3):4	1990
Review	12(1):6-8	1984
In Spain	18(1):5	1990
	18(4):4	1990
	18(2):4	1990
Contagious equine metritis	10(1):3	1982
	10(2):4-5	1982
	11(1):4	1983
	18(4):6	1990
In the Netherlands	15(3):3	1987
	18(4):6	1990
	15(4):4	1987
In Switzerland	16(4):4	1988
Corridor disease	13(2):13-14	1985
Cosmopolitan theileriosis	13(2):13	1985
Data bank	17(4):15	1989
Dermatophilosis and heartwater, in the Caribbean	13(1):6-9	1985
Detector dog program	14(2):1-2	1986
<i>Diptera</i> , exotic	11(1):4-5	1983
	11(4):3-4	1983
Diseases eradicated from the United States	10(1):5-6	1982
Disinfectants, approved by USDA	14(3):7-9	1986
Douglas virus	17(3):9	1989
Duck plaque review	15(3):4-11	1987
East Coast fever	13(2):13	1985
Editorial committee membership	12(1):8	1984
	12(4):15	1984
	14(3):10	1986
	17(2):14	1989
	18(4):10	1990
Embryo importation	11(2):4-5	1983
	18(1):7-8	1990
Emergency disease		
Information	10(1):3	1982
Investigations	13(1):5	1985
	14(1):1	1986
	14(4):1	1986
	15(1):1-2	1987
	15(2):1	1987
	15(3):1	1987
	15(4):1-2	1987
	16(1):1	1988
	16(2):1	1988
	16(3):1	1988
	16(4):1	1988
	17(1):1	1989
	17(2):1	1989

	17(3):1	1989
	17(4):1	1989
	18(1):1	1990
	18(2):1	1990
	18(3):1	1990
	18(4):1	1990
Ephemeral fever	15(1):3	1987
Epizootic hemorrhagic disease, in Canada	16(3):5	1988
Equine piroplasmiasis, in Puerto Rico	11(4):5	1983
Eradicated diseases, in the United States	10(1):5-6	1982
Exotic <i>Diptera</i>	11(1):4-5	1983
	11(4):3-4	1983
Exotic disease agents in animal products	13(4):1-2	1985
Exotic Newcastle disease. (See: Velogenic viscerotropic Newcastle disease.)		
Exotic ticks		
On ostriches	17(3):5-6	1989
In Texas	12(3):2-3	1984
Update	17(4):2-3	1989
Far East animal health notes	15(1):2-4	1987
Fiji, disease status of	15(3):3	1987
Food and Agriculture Organization [of the United Nations]	11(3):7-8	1983
Food Safety and Inspection Service, USDA	13(2):5	1985
Foot-and-mouth disease (FMD)		
In Africa	13(1):6	1985
	17(1):7	1989
	18(1):4	1990
	18(2):3	1990
	18(3):3	1990
	18(4):2-3	1990
In Asia	13(1):6	1985
	15(2):5-11	1987
	17(1):7	1989
	18(1):4	1990
	18(2):3	1990
	18(3):3	1990
	18(4):3	1990
In Chile	12(2):12	1984
	15(1):4	1987
	15(2):11	1987
In Colombia	11(1):5-9	1983
	16(2):7-12	1988
In Denmark	10(1):1	1982
	10(2):2	1982
	(2):2	1983
In elephants	12(4):6-7	1984
In Europe	17(2):2	1989
In the Far East	15(1):2-4	1987
Geographic distribution	13(3):8	1985
	15(1):4	1987
	15(2):12	1987
	15(3):2	1987

	16(1):3	1988
	16(2):3-5	1988
	16(3):3-4	1988
	16(4):3-4	1988
	17(2):2	1989
In the German Federal Republic	16(2):4	1988
In Israel	15(2):12	1987
In Italy	13(1):6	1985
	13(2):11	1985
	13(3):7-8	1985
	15(1):4	1987
	15(2):11-12	1987
	15(4):3	1987
	17(1):7	1989
	18(1):4	1990
In Mexico	13(1):10	1985
In the Middle East	18(1):4	1990
	18(2):3	1990
	18(3):3	1990
In the Netherlands	12(1):3-4	1984
In South America	13(1):6	1985
	17(1):6	1989
	17(2):2	1989
	18(1):4	1990
	18(2):3	1990
	18(3):3	1990
Subunit vaccine	10(3):3	1982
Surveillance		
In Mexico	13(1):10	1985
	16(1):5-8	1988
In Tunisia	18(2):7-9	1990
In the U.S.S.R.	18(2):3	1990
	18(3):3	1990
Vaccine bank	10(2):7-8	1982
Virus		
Animal products	13(4):1-2	1985
Effects of drying	13(2):5-6	1985
Type Asia1	13(3):8	1985
Survival, drying	13(2):5-6	1985
Foreign animal disease		
Awareness	16(2):1-2	1988
Research	14(4):11-12	1986
Teachers seminar	10(3):7	1982
Training	14(1):3	1986
	15(4):2	1987
	16(3):2	1988
	18(1):1	1990
Update. ( <i>See also:</i> World animal disease roundup.)	14(4):7	1986
	15(1):4	1987
	15(2):11-12	1987
	15(4):3-5	1987

	16(1):3-4	1988
	16(2):3-5	1988
	16(3):3-6	1988
	16(4):3-4	1988
	17(1):6-8	1989
	17(2):2-4	1989
	17(3):2-3	1989
	17(4):4-7	1989
	18(1):4-6	1990
	18(2):3-6	1990
	18(3):3-4	1990
	18(4):2-8	1990
Foreign Animal Disease Advisory Committee	10(3):6-7	1982
	16(3):2-3	1988
	18(2):1	1990
Foreign Animal Disease Report		
Editorial Committee	12(1):8	1984
	12(4):15	1984
	14(3):10	1986
	18(4):10	1990
How it is produced	12(1):8	1984
Purpose	10(1):1	1982
Foreign Service employment	10(2):8	1982
	10(3):5-6	1982
Gammaherpesvirinae	12(4):4	1984
Genetically engineered FMD vaccine	10(3):3	1982
Getah disease	18(2):10-13	1990
Glanders, in Turkey. ( <i>See also</i> : Errata at 12(2):12.)	11(4):5	1983
Haemaphysalis	13(2):13	1985
Harry S. Truman Animal Import Center	10(3):4	1982
Haiti		
African swine fever		
Emergency declared	11(1):3	1983
Program	10(1):2	1982
	10(2):3	1982
	10(3):2	1982
	11(1):2-3	1983
	11(2):2-3	1983
	11(3):2-3	1983
	11(4):2-3	1983
	12(4):1-2	1984
No wild swine in	10(1):2	1982
Heartwater		
And dermatophilosis, in the Caribbean	13(1):6-9	1985
Investigation	10(2):4	1982
Review	10(1):6-10	1982
	17(2):4-7	1989
Update	16(1):11-13	1988
Hemorrhagic septicemia, Asiatic		
In bison	13(3):13	1985
In the Far East	15(1):3	1987
Review	13(2):6-11	1985
Hides and trophies, imported	14(2):3-4	1986



<i>Hippobosca longipennis</i>	11(4):3-4	1983
Hog cholera. (See also: Errata at 11(3):4, 1983; 16(2):5, 1988; and 16(3):4, 1988.)		
In Africa	17(2):4	1989
	18(1):6	1990
	18(2):5	1990
In Asia	18(1):6	1990
	18(2):5	1990
In Austria	11(3):16	1983
In Belgium	15(3):2	1987
	18(3):4	1990
In China	18(3):4	1990
Diagnosis	15(3):3-4	1987
In England	15(4):3	1987
In Europe	15(4):3-4	1987
In the Far East	15(1):3-4	1987
	17(2):3	1989
In France	17(2):4	1989
In Germany	15(3):3	1987
	18(1):6	1990
	18(3):4	1990
Geographic distribution of	11(1):4	1983
In Hong Kong	18(3):4	1990
Immunoperoxidase test (IPT)	18(4):8-10	1990
In Italy	15(3):2	1987
In Japan	15(1):1	1987
In Mexico	17(1):7	1989
	18(2):5	1990
	18(3):5	1990
In New Hampshire	15(1):1-2	1987
In the Netherlands	15(3):3	1987
In the Philippines	17(2):4	1989
	18(3):5	1990
Review	12(4):7-15	1984
In South America	17(2):3	1989
	18(1):6	1990
	18(2):5	1990
Surveillance	16(1):5	1988
In Taiwan	18(1):6	1990
In Texas, suspected	16(1):1	1988
In Yugoslavia	15(3):3	1987
	18(3):5	1990
<i>Hyalomma</i> spp.	13(2):13	1985
Hydranencephaly, in sheep	15(2):2-3	1987
Hydropericardium syndrome, in chickens	18(1):10-11	1990
Importation of animals and meat	12(3):2	1984
Cattle, from Europe	12(1):4	1984
Pork	13(2):5	1985
Industry-USDA workshop	18(3):2	1990
Italy, FMD in	13(1):6	1985
	13(2):11	1985
Ivermectin	12(1):5	1984

Japanese encephalitis		
In Asia	15(1):3	1987
In India	16(3):4-5	1988
Jembrana disease		
In Bali	15(1):3	1987
Review	13(3):10-13	1985
Laboratories, international reference	14(2):4	1986
Llamas		
Imported from Chile	12(3):2	1984
Imports	15(2):4	1987
Los Angeles Animal Import Center	12(3):2	1984
Lumpy skin disease	16(2):5	1988
	16(3):4	1988
	16(4):4	1988
	18(1):5	1990
	18(2):4,9	1990
	18(3):4	1990
Maedi review	14(1):4-10	1986
Malawi, African swine fever in	13(1):6	1985
Mali		
Project	12(3):5	1984
Rinderpest in, and Togo	13(2):11-12	1985
Malignant catarrhal fever review	12(4):3-6	1984
Manila office, APHIS	12(4):3	1984
Maryland, avian influenza in	13(1):1	1985
	13(2):3	1985
Mediterranean and tropical theileriosis	13(2):13	1985
Melioidosis	17(2):10-13	1989
Mexico		
Border security in	14(1):2	1986
FMD survey in	13(1):10	1985
	14(1):2	1986
Rabbit disease in	17(1):8-9	1989
	17(2):7-10	1989
	17(3):3	1989
	17(4):10-12	1989
	18(2):2	1990
	18(4):6	1990
Screwworm program in	12(4):2	1984
Vesicular stomatitis in	12(1):5	1984
	12(3):4	1984
Model regulation on zoological animals	14(4):6	1986
<i>Musca vitripennis</i>	10(2):2	1982
	11(1):5	1983
	11(4):3	1983
National Animal Disease Detection System (NADDS)	13(2):3	1985
Necrotic hepatitis of rabbits	17(2):7-10	1989
Nematodiasis	13(4):4-6	1985

Newcastle disease. ( <i>See also</i> : Velogenic viscerotropic Newcastle disease.)		
In the Far East	15(1):3	1987
Geographic distribution	17(1):7-8	1989
	18(1):6	1990
	18(2):5	1990
	18(3):5	1990
In pet birds	13(1):5	1985
	16(3):1-2	1988
In pigeons	13(1):5-6	1985
Office International des Epizooties (OIE)	10(2):6-7	1988
Animal health information systems	16(2):5-6	1988
Oriental theileriosis	13(2):13	1985
Ostriches		
Diseases of	18(2):9-10	1990
With exotic ticks	17(3):5-6	1989
	17(4):2-3	1989
Ossabaw Island, vesicular stomatitis on	11(4):1-2	1983
	15(3):1	1987
	16(4):1-2	1988
	17(4):4	1989
	18(3):5	1990
Panama, veterinary services of	11(3):3-7	1983
<i>Parafilaria</i> vector	10(2):2	1982
Parafilariasis		
In cattle, review	11(1):11-15	1983
Seasonal testing. ( <i>See also</i> : Errata at 11(2):12.)	11(1):15	1983
Therapy for	12(1):5	1984
"Parent Committee" on organisms and vectors	13(1):9-10	1985
Parvoviral disease, in swine	15(1):5	1987
Peaton virus	17(3):9,10	1989
Penguin eggs, imported	12(1):4-5	1984
Pennsylvania, avian influenza in	12(3):1	1984
	12(4):1	1984
	13(1):1	1985
	14(1):1	1986
Peste des petits ruminants	16(4):3	1988
	17(1):7	1989
	17(2):3	1989
	18(1):5	1990
	18(2):4	1990
	18(3):4	1990
	18(4):4	1990
Pet birds, Newcastle disease in	13(1):5	1985
Piroplasmosis. ( <i>See</i> : Babesiosis.)		
Philippine scientific and technical exchange	11(2):5-6	1983
Plant Protection and Quarantine	11(1):9-11	1983
	13(4):6	1985
Plum Island research	14(4):11-12	1986

Port inspections, of animal products	11(1):9-11	1983
	13(4):6	1985
Pox, in European zoos	18(2):6-7	1990
Puerto Rico, tick program in	11(4):5-7	1983
	12(2):11-12	1984
	13(3):1	1985
	14(1):2	1986
Rabbit disease, in Mexico	17(1):8-9	1989
	17(2):7-10	1989
	17(3):3	1989
	17(4):10-12	1989
	18(2):2	1990
	18(4):6	1990
Rama Dewa disease [Jembrana?]	13(3):10	1985
Recorded Emergency Animal Disease Information (READI) System		
Revised	14(4):3	1986
Test exercise	15(4):2	1987
	16(3):2	1988
Update	15(3):1-2	1987
Workshop	18(3):2	1990
Reference laboratories, international	14(2):4	1986
Research, at Plum Island	14(4):11-12	1986
	15(1):12-14	1987
	15(2):12-15	1987
Rhinoceros, ticks in Texas	12(3):2-3	1984
	17(4):3	1989
Rhinotracheitis, in turkeys	15(4):5-7	1987
Rhipicephaline theileriosis	13(2):13	1985
<i>Rhipicephalus</i> spp.	13(2):13	1985
Rift valley fever		
In Africa	16(4):4	1988
	17(2):3	1989
	18(1):5	1990
	18(2):4	1990
Review	10(2):9-14	1982
Update	16(2):3-4	1988
	16(3):7-11	1988
Rinderpest		
In Africa	13(1):6	1985
	15(1):4	1987
	16(1):3	1988
	16(2):5	1988
	17(1):7	1989
	18(1):5	1990
	18(2):4	1990
Control	12(3):5-7	1984
In the Far East	15(1):3	1987
	17(2):3	1989
Geographic distribution of	13(3):9	1985
	15(1):4	1987

In Oman	18(2):4	1990
In Sri Lanka	16(1):3	1988
	16(3):4	1988
	16(4):3	1988
In Togo and Mali	13(2):11-12	1985
Review	11(4):8-12	1983
	16(3):11-20	1988
In the U.S.S.R.	18(3):3	1990
Vaccine for	17(3):6-8	1989
Rome, office operations of APHIS	12(4):3	1984
<i>Salmonella enteritidis</i> , phage type 4	16(4):2-3	1988
	18(3):6	1990
Salmonellosis, avian	16(4):2-3	1988
	18(3):6	1990
Sardinia, African swine fever in	13(1):6	1985
Screwworm		
In Florida, in dogs	15(4):1	1987
In Libya	18(4):8	1990
In Mexico, eradication	12(4):2	1984
In Puerto Rico	17(4):1-2	1989
Program		
Update	13(2):1-2	1985
	14(4):10	1986
Review	11(2):7-11	1983
In Texas, in dogs	15(3):1	1987
Sheep		
Arthrogryposis and hydranencephaly in	15(2):2-3	1987
Malignant catarrhal fever associated		
with	12(4):4	1984
Sheep pox and goat pox	16(4):4	1988
	17(1):7	1989
	17(2):3	1989
	18(1):5	1990
	18(2):4	1990
	18(3):4	1990
Geographic distribution of	13(3):9	1985
	16(2):5	1988
	16(3):4	1988
	18(4):4	1990
Smuggled birds	17(1):2	1989
SNOVET. (See: Systematized Nomenclature		
of Veterinary Medicine.)		
Soft ticks, on Hispaniola Island	10(1):2	1982
South America, FMD in	13(1):6	1985
Spanish language Foreign Animal Disease Report	12(4):7	1984
Spider lamb syndrome	15(1):7-12	1987
Survival of disease agents, in animal products	13(4):2-3	1985
Suspected foreign animal diseases	10(2):4	1982
	11(1):4	1983
	11(2):4	1983
	11(3):3	1983



Swine blue eye	18(1):11-15	1990
Swine parvoviral disease	15(1):5	1987
Swine vesicular disease		
In Hong Kong	15(4):9	1987
	16(2):5	1988
In Italy	17(2):3	1989
Review	15(4):8-12	1987
Swollen head syndrome	15(4):6-7	1987
Systematized Nomenclature of Veterinary		
Medicine (SNOVET)	12(4):7	1984
Tabanan disease, in Jembrana	13(3):10	1985
Teschen disease	16(4):4	1988
	17(1):7	1989
	17(2):4	1989
	18(1):6	1990
	18(2):5	1990
	18(3):5	1990
	18(4):5	1990
Test exercise, APHIS	10(2):1	1982
	11(2):6	1983
Texas, exotic ticks in	12(3):2-3	1984
Theileriosis, bovine, review	13(2):12-17	1985
Tick-borne protozoa	13(2):12	1985
Tick program		
In the Caribbean, feasibility for	15(1):14-15	1987
	16(1):4-5	1988
In Puerto Rico	11(4):5-7	1983
	12(2):11-12	1984
	13(3):1	1985
	13(4):1	1985
	14(1):2	1986
Ticks		
On imported ostriches	17(3):5-6	1989
On imported rhinoceroses	12(3):2-3	1984
	16(1):4-5	1988
	17(4):3	1989
Surveyed, on Antigua	17(4):7-8	1989
Tinaroo virus	17(3):9,10	1989
Togo and Mali, rinderpest in	13(2):11-12	1985
Trophies and hides, imported	14(2):3-4	1986
Tropical bont ticks	13(1):7	1985
	15(1):14-15	1987
Tropical theileriosis	13(2):13	1985
Truman, Harry S., Animal Import Center	10(3):4	1982
Trypanosomiasis, in the Western Hemisphere	16(1):13-16	1988
Turkey rhinotracheitis	15(4):5-7	1987
Velogenic viscerotropic Newcastle disease		
In Asia, Africa, and Panama	18(1):7	1990
In Botswana, Malaysia, Pakistan, and the U.S.S.R.	18(3):5	1990
In Ecuador, Mauritius, Pakistan, and the U.S.S.R.	18(2):6	1990

In exotic birds, in the United States	10(2):4	1982
	10(3):4-5	1982
	11(2):1	1983
	11(3):1-2	1983
	11(4):2	1983
	12(3):1-2	1984
	13(3):1	1985
	15(2):1	1987
	16(3):1-2	1988
	16(4):1	1988
Venezuelan equine encephalomyelitis, review	14(4):13-18	1986
Vesicular stomatitis		
In Central and South America	16(2):5	1988
	18(1):4	1990
	18(3):3	1990
In Colombia	16(3):3	1988
Conference on	13(1):3-4	1986
Field studies on	14(4):3	1986
Fingerprinting virus of	16(1):8-10	1988
Historical review	10(3):11-14	1982
In Mexico	12(1):5	1984
	12(3):4	1984
	16(2):5	1988
	18(2):4	1990
	18(3):6	1990
In Missouri. ( <i>See also</i> : Errata at		
11(2):12.)	11(1):1	1983
On Ossabaw Island, Georgia	11(4):1	1983
	15(3):1	1987
	16(4):1-2	1988
	17(4):4	1989
	18(3):5	1990
Review	10(3):8-11	1982
In the United States	10(3):1-2	1982
	11(1):1	1983
	11(2):1-2	1983
	11(3):1	1983
	12(2):11	1984
	13(1):3	1985
	13(3):2	1985
	13(4):1	1985
Vaccine for	11(4):2	1983
Veterinary Services, in Central America and Panama	11(3):3-7	1983
Viral hemorrhagic disease (VHD) of rabbits	17(1):8-9	1989
	17(2):7-10	1989
	17(3):3	1989
	17(4):10-12	1989
	18(1):6	1990
	18(2):2	1990
	18(3):5	1990
	18(4):6	1990

Viral turkey rhinotracheitis	15(4):5-7	1987
Visna-Maedi, review	14(1):4-10	1986
VVND. (See: Velogenic viscerotropic Newcastle disease.)		
Water buffalo, import-export of	18(1):3-4	1990
Wesselsbron disease		
Review	17(1):9-15	1989
Vaccine for	18(4):10	1990
Wildebeest-associated malignant catarrhal fever	12(4):4	1984
Wildlife		
Avian influenza in	12(2):2-4	1984
Disease studies in	10(2):5-6	1982
	18(1):9-10	1990
And tick survey on Antigua	17(4):7-8	1989
World animal disease roundup. (See also: Foreign animal disease update.)	10(1):3-5	1982
	10(2):8-9	1982
	10(3):7	1982
	11(1):3	1983
	11(2):3-4	1983
	11(3):1-2	1983
	11(4):4-5	1983
	12(1):3-4	1984
	12(2):4	1984
	12(3):4	1984
	12(4):2-3	1984
	13(1):6	1985
	13(2):11-12	1985
	13(3):8-9	1985
	13(4):7-8	1985
	14(1):4	1986
	14(2):2-3	1986
	14(3):4-5	1986
	15(1):4	1987
Zimbabwean malignant catarrhal fever	13(2):13	1985
Zoological animal regulation	14(4):6	1986

**Questions about the FAD Report may be sent to:**

Dr. Edwin I. Pilchard, Editor  
USDA, APHIS, VS  
Room 741, Federal Building  
6505 Belcrest Road  
Hyattsville, MD 20782

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